

Applicants traverse the rejection of claims 1-6, 8-24 and 26-29 as anticipated by Descamps et al. U.S. Patent No. 4,306,006.

Independent claim 1 specifies a method of producing a reverse image mask comprising the steps of: depositing a metallic layer on a substrate; applying resist on the metallic layer to pattern desired features; plating the metallic layer with a metal film; stripping the resist; and etching the metallic layer using the metal film as a mask.

Descamps et al. do not disclose or suggest plating a metallic layer with a metal film to produce a reverse image mask. Instead, Descamps et al. disclose applying resist on a metallic layer to pattern desired features and evaporating or depositing a platinum layer to coat the entire substrate including the resist layer, as clearly illustrated in Fig. 5.3. This is distinct from the claim invention in which only the metallic layer is plated with a metal film. During the plating process, the metal film does not print on the resist pattern areas. Instead, it only prints in non-pattern areas having exposed chrome.

Because Descamps et al. do not disclose each and every step of the claimed method, there is no anticipation and the rejection is improper. Moreover, because Descamps et al. do not suggest the use of plating as in the claim, the obviousness rejection would be improper. Illustrative of the lack of anticipation, in the obviousness rejection of claims 7 and 25, the action notes that nickel is a well-known electro-plating material and thus can be used as a metal film. This suggests that the error in the rejection is due to interpreting Descamps et al. as teaching the use of electro-plating, which it does not. Electro-plating would not result in the metal film on the resist areas, as

shown in Fig. 5.3 of Descamps et al. Descamps et al. teach the use of evaporation or deposition to coat the entire surface.

Claims 2-6 and 8-11 depend from claim 1 and are believed allowable for the same reasons therefor. Regarding claim 3, Descamps et al. do not disclose or suggest a substrate having an attenuated layer deposited thereon. Regarding claim 11, Descamps et al. do not disclose or suggest that applying resist on a metallic layer further comprises applying assist features proximate desired features. Claims 3 and 11 are believed allowable for these reasons as well.

Independent claim 12 specifies a method of producing a correct negative reticle with a positive tone resist comprising the steps of: depositing an opaque metallic layer on a transparent substrate; printing a reverse pattern of positive tone resist on the opaque metallic layer to pattern desired features; plating the opaque metallic layer with copper in non-patterned areas; stripping the resist; and etching the opaque metallic layer using the copper in the non-patterned areas as a mask.

As noted above, Descamps et al. do not disclose or suggest plating an opaque metallic layer with copper in non-patterned areas. Descamps et al. disclose depositing or evaporating a metal film on an entire substrate. Claim 12 and its dependent claims 13-18 are believed allowable for these reasons.

Independent claim 19 specifies a method of producing a reverse image mask comprising the steps of: depositing an opaque metallic layer on a substrate; applying resist on the opaque metallic layer to pattern desired features; plating the opaque metallic layer with a metal film; stripping the resist; and etching the opaque metallic layer using the metal film as a mask.

As discussed above, Descamps et al. do not disclose or suggest plating an opaque metallic layer with a metal film to produce a reverse image mask. Claim 19 and its dependent claims 20-24 and 26-29 are therefore believed allowable.

For the above reasons, claims 1-6, 8-24 and 26-29 are believed allowable and withdrawal of the rejection is requested.

Applicants traverse the rejection of claims 7 and 25 as obvious over Descamps et al. in combination with one of ordinary skill in the art's ability.

Claims 7 and 25 depend from claim 1 and 19, discussed above, and specify that the metal film comprises nickel. As noted above, Descamps et al. does not disclose or suggest use of electro-plating. Descamps et al. use evaporation or deposition. Therefore, the fact that nickel is a well-known electro-plating material is irrelevant since Descamps et al. does not disclose or suggest use of electro-plating.

For the above reasons, claims 7 and 25 are believed allowable and withdrawal of the rejection is requested.

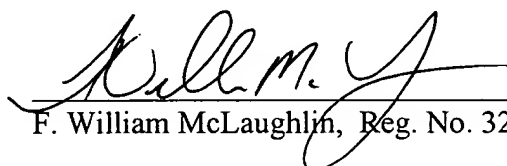
Reconsideration of the application and allowance and passage to issue are requested.

If any outstanding issues remain, the Examiner is invited to telephone applicants' undersigned attorney to discuss the application.

Respectfully submitted,

Date: December 3, 2003

Wood, Phillips, Katz, Clark and Mortimer  
500 W. Madison Street, Suite 3800  
Chicago, IL 60661-2511  
(312) 876-1800

  
F. William McLaughlin, Reg. No. 32,273